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ABSTRACT

A study was conducted to determine whether and how children with diverse cultural backgrounds, including the cultural mainstream in North America, might differentially identify and acquire rules of discourse appropriate to becoming literate. This study examined the natural language used by teacher and students recorded within selected periods of literacy learning in a desegregated classroom of first grade students. Subjects were a female teacher from the mainstream culture who had six years of teaching experience and three male children, each from a different cultural background. Results showed that the teacher continued to issue procedural directives within lesson times and over all periods of observation. At the same time, there was little cohesion in the talk, either of the teacher over time or between the teacher and her students, save that the latter tended to cohere as requested to particular demands, queries, or comments on the part of the teacher. (HOD)

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THE LEARNING OF DISCOURSE RULES BY CULTURALLY DIFFERENT CHILDREN IN FIRST GRADE LITERACY INSTRUCTION

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The Learning of Discourse Rules by Culturally Different Children in First Grade Literacy Instruction

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I. Introduction

In the mainstaeam culture of North America the expansion of communicative competence is one of the most important kincs of socialization that can occur among the young (Cook-Gumperz and Gumperz 1981, DeStefano 1978, Florio et. al. 1981, Hymes 1974). To quote Mehan, Cazden, Coles, Fisher and Maroules, (1976):

> In general terms, "communicative competence" (Hymes, 1972) in the classroom involves knowing that certain ways of talking and acting are appropriate on some occasion and not others, knowing with whom, when and where they can speak. This requires students to bring their action into synchrony with people who are already talking. To do so, they must employ classroom rules for taking turns, produce ordered utterances, and make coherent topical ties (p. 196-197).

Further,

> ... classroom competence involves matters of <u>form</u> as well as <u>content</u>. To be successful in the classroom, students must not only know the content of academic subjects, they must learn the appropriate form in which to cast their academic knowledge (p. 161).
> Because classroom rules are tacit and implicitly communicated to students, they must engage in active interpretive work. Students interpret implicit classroom rules that specify different course of action and vary from occasion to occasion. Successful participation in the culture of the classroom involves the avility to relate behavior, both academic and social, to a given classroom situation, in terms of implicit rules. This involves going beyond the information to understand the teacher linking particular features in general patterns by filling in contextual information (cf. Cicourel, Jennings, Leitey, Mackay, & Mehan, 1974)....To be competent members of the classroom community, then, students need academic skills <u>and</u> interactional skills. They must produce factually correct academic information, <u>and</u> they must provide this content in the appropriate form (Mehan et al., 1976, 198-199).

Within the school systems that are expected to provide for the formal education of children in our society, students are supposed to be taught and,

in turn, to learn how to become acceptably literate. In the school setting, as in the wider society, then, considerable importance is attached to literacy -- the demonstration of ability to read, write and spell "correctly" (Destefano, Pepinsky and Sanders, 1980a; Hoover, 1975).

In our experience, demonstrated competence in acquiring of the rudiments of literacy in first grade is often synonomous with success in that grade and is used as a major criterion of eligibility for promotion to second grade. In fact, the student who fails to satisfy this criterion as defined by the teacher may fail the first grade.

Rates of failure in learning to be literate appear disproportionately high among native English-speaking students in the "inner-city schools" of large cities throughout North America. In these schools many children from inner-city Black and Appalachian cultures are to be found. It is widely documented and a reason for parent action in such public arenas as the courts (the recent Ann Arbor case, for one) that children from these cultures, which have traditionally placed value upon oral rather than written means of cultural transmission, often do have "problems" in learning to become literate according to the rules of mainstream culture with which they come in contact in school.

For several years, research on the apparent mismatch between these children and their schools and their subsequent failure in the schools has centered on the language of Black children from the inner-city and, to a lesser extent, on that of children from Appalachia, among others, with greatest emphasis on the formal features of language used by members of these groups. One of the most helpful insights to come out of this research was that phonological and syntatic differences among the varieties of American English used by these children has less effect upon the students demonstrated ability to become literate than the teachers attitudes toward those differences (Williams, Whitehead, & Mitler, 1977).

However, a major question remains unanswered. Why does this apparently widespread lack of success in becoming literate persist among members of these groups? Literature dealing with this question has not emphasized the interaction that occurs between such students and their teachers in the classroom. Although teachers may have been asked how they feel about the children's language (as in attitude studies such as those of Williams et al., 1977), they usually have not been observed in the act of teaching within the classroom. Or the children's language may have been studied, but usually not in relation to educational tasks. Infrequently, measures of task-performance, e.g., of reading (cf. Labov & Robins, 1973), have been obtained but under more restricted conditions than those of actual interaction in the classroom during reading instruction. Currently, however, more studies are focusing on such settings (cf. the classroom language project at the Center for Applied Linguistics, Shuy & Griffin, 1978; see also Cook-Gumperz & Gumperz, 1981; Eder, 1981; Mehan et al., 1976 & 1981).

A reason for thus centering attention upon the context in which children are exposed to literacy instruction is that language is explicitly used to teach and learn about language and that there is attendant emphasis placed on competence in verbal communication, both receptive and productive. During lessons on literacy, teachers tend to concentrate on students' verbal behavior and to "evaluate" in a highly prescriptive manner, their verbal initiations and responses. As Circourel et al. (1974) observed, the teacher is evaluating the children's development of "interactional competence" (p. 15).

In this research, we have also elected to work within that arena and context of interaction between student and teacher. A few preliminary words about our conceptual focus will help to clarify both the kinds of questions we

have raised in the investigation and the methods employed to deal with them. We begin with the postulate that teaching in a classroom, like counseling or over-the-counter saleswork, exists as a process of social influence (cf. Strong, 1978) in which treatment policies are both made and implemented, primarily through the medium of language (Meara, Pepinsky, Shannon, and Murray, 1981). We assume that teaching "success" requires concerted actions on the part of teacher and students so as to further their attainment of common knowledge and common understanding of what is taking place between them. The process thus entails the " social construction of reality" in which agreements are negotiated about what is taking place and for what purpose (cf. Berger & Luckmann, 1966; Garfinkel, 1967).

In this view of things, students and teacher come to the instructional arena with prior intentions and expectations. Through their use of language, they signal their expectations, influence one another reciprocally, and establish ground rules that define social policies to guide them further in their interactions. Ideally in the process, they attain a common knowledge and understanding of things that enable them to work further in concert so as to minimize perceived discrepancies between actual and desired states-of-affairs (after Pepinsky & Patton, 1971; for a parallel statement and evidence about what occurs during counseling or psychotherapy, cf. Meara et al. (1981).

Quite apart from other "expert testimony" that outsiders may bring to bear on the problem of describing and interpreting classroom teaching and its outcomes, then, it is the phenomenally perceived "realities" of students and teacher who interact there that define for <u>them</u> what is happening and how it is to be evaluated. As we have already suggested and shall document below, it is the teacher in our study who serves as gatekeeper in using information available to her so as to decide and record for future reference how well each

student performed and who was or was not ultimately to be promoted by the end of the year to the next grade.

Hence, in the research below, we chose to deal with the teaching and learning of literacy in the classroom as a context in which natural language was to be employed and modified. The study of language thus used by teacher and students, we reasoned, would help us to identify rules of discourse to be taught and acquired. We wanted to know, particularly, whether and how children with diverse cultural backgrounds, including that of the cultural mainstream in North America, might differentially identify and acquire rules of discourse appropriate to becoming literate. A second major question centered on the children's degree of success in becoming literate. Final questions asked were 1) how effective was the teacher in teaching rules of discourse and literacy, and 2) what strategies did she employ?

II. Method

In order to begin to answer these question, this study was centered on the actual language among teacher and students, recorded within selected periods of literacy learning in a desegregated classroom of first-graders.

A. Setting

The site of research in this study was a self-contained classroom of first graders in a mid-sized school in the immediate ring surrounding the inner-city area of a large midwestern city. The cultural mix of the neighborhood is principally inner-city Black and Appalachian. As part of the school system's program of desegragation, put into effect the year we conducted this research, the school had been paired with an adjoining area comprised principally of middle-to

low-income families of Whites and Blacks from the cultural mainstream. For the first time in the history of the system, children from the adjoining area were bussed in.

B. Subjects

The teacher in this study was from mainstream culture and had six years of teaching experience, all in the site school where our research was conducted. Therefore, she was more experienced in working in her classroom with students from the Black and Appalachian cultures, than with those who shared her cultural background. Nhe self contained classroom is typical of many in the school system, although less traditional settings exist in various areas of the city. A basal reading series was used for primary instruction in reading.

In addition to the teacher, three children served as subjects in the research. Each of these subjects was a male first-grader with the usual kindergarden experience of students in the city's schools, consisting of half-day sessions focussed primarily upon "readiness" and socialization. One child, Harry, was from the cultural mainstream; one we call Dick, from inner-city Black culture and one we named Tom, from the Appalachian culture. Cultural membership was determined via family history and performance on sentence repetition tasks, revealing use of Black English, or an Appalachian dialect such as South Midland, or a less marked form of American English. Males were selected because research indicates that they have demonstrated more difficulty in becoming literate than females do in North America (DeStefano, 1978).

All males from the Appalachian culture who were in the first grade (five classrooms) in the school were repeaters, save two students who

were daily taking behavior-modifying medication. Therefore, it was necessary to select as a subject from the Appalachian culture, a chid who was repeating the first grade. The selected child's retention had been attributed to prolonged absence during the previous school year.

C. Data Collection

Discourse of the teacher and the three principal student subjects, during the teaching/learning of literacy in the classroom and at other times, was collected via audio-tape and videotapes. The use of lavalier wireless microphones made it possible to collect the student subjects' subvocalizations as well as their interactive language in the classroom. The individual audiotapes facilitated careful transcription and examination of interactional discourse. Videotaped records were available to provide a check against the audio- and the opportunity to examine elements of nonverbal interaction as well as elements of verbal interaction. Classroom observation notes were collected and served as yet another check upon the accuracy of information collected and analyzed in this research.

Data were collected on three consecutive days during the third week of school during the first year of desegregation; again, after conclusion of the first grading period, before Christmas, and at the beginning of the second semester of that year. The periods of data collection consisted primarily, but not exclusively, of time which literacy instruction occurred. The periods were interspersed with other business, such as explanations of seatwork, time-structuring, and language used to control individuals and groups of children. We definitely did sample discourse from times other than during literacy teaching frames, but ran into two problems which precluded doing

much with those data. First, the class developed into a class on reading for the entire day. In the morning, each reading group met, and then in the afternoon, they each met again. When they weren't meeting, they were doing seatwork as individual students. We do have our student subjects' subvocalizations and whispered conversations, but because of the second major problem, lack of funds to support the detailed analysis we engaged in, we haven't been able to do much with these data. However, we have definite plans to look at the text approximations our subjects made subvocally while reading at their desks.

The above schedule for the collection of data was used because the first few weeks of school were crucial for identifying problem areas in the initial acquisition of literacy, as defined by the teacher. Also during this period, concepts, classroom values, and social expectations tied to the learning of literacy were introduced by the teacher. By the second collection period, the children had been exposed to approxiamately three months of instructional discourse in the classroom. At that time, the children were academically assessed as to their progress in becoming literate. Finally, by late February, they had been assessed three times in their progress, having been further exposed to instruction and having experienced the interruption of the Christmas holiday. This holiday period was a major break in the school year, providing the subjects with some re-isolation in their respective cultures.

In addition to the discourse a variety of data was collected related to the subjects' relative success in becoming literate. This

information was used to construct a literacy learning success profile for each subject. Included in this data base were:

1) Teacher evaluation of each subject's success as determined by assignment of subjects to classroom reading groups, interviews with the teacher, and grades on report cards;

2) Scores on Clay's (1972) Concepts About Print Survey, Sand, as measured in September and February. The Sand procedure was designed to measure a limited set of concepts about print and the tasks involved in engaging in printed texts that are typically learned during the first two years of school. A child who is progressing in terms of internalizing these concepts should demonstrate improved scores on successive measures during the course of the academic year;

3) Scores on criterion-referenced tests in the classroom administered reading series (Houghton-Mifflin)for passage between reading levels;

4) Classroom reading and writing behavior; and

5) Scores on Clay's (1972) written language evaluation procedure. For each subject writing efforts collected over a three week period in March and April, 1980, were utilized for this procedure.

D. Discourse Analysis

Discourse recorded each day during the three periods of observations was first carefully transcribed. Representative samples of these texts were then examined independently by three different methods, to provide analyses within and over ocassions (a) of interactions among our subjects, (b) of cohesion within and among their utterances, and (c) of their grammatical structuring.

Interactions and other activities in the classroom were examined following methods introduced by Sinclair & Coulthard (1975, Chapter 3; also Mehan, 1979).

Use of Mehan's (1979) analytic framework results in displays of both student and teacher-initiated talk as well as their replies to talk initiated by others. In addition, the teacher's evaluative statements are identified and displayed. Exchanges between talkers are treated as basic interactional units in this form of analysis. Sinclair and Coulthard (1975) offer a complementary mode of analyzing activities in the classroom, much like Mehan's in that each interaction is organized in three parts: an initiation of some type, a reply, and, finally a "follow-up." But, by contrast, this approach to analysis concentrates on academic rather than social interaction, emphasizing teacher initiation of talk and the teacher's control of discourse. Also, it is based on a relatively traditional organization of behavior within the classroom.

Cohesion, as described by Halliday & Hasan (1976: see Appendix A) has to do with internal consistency among the component parts of a set of texts. Cohesion analysis was designed to make explicit a speaker's or readers's ability to know whether a given sample of discourse is or is not to be comprehended as a unified text (adapted from Halliday & Hasan, 1976). In our research, Halliday & Hasan's (1976) method of analyzing cohesion in text was used to determine whether the teacher's and her students' talk was interrelated, and whether over the periods of instruction in literacy, there was a tendency for the contents of the students' talk to become even more related to -- i.e., to converge with --those of the teacher. Moreover, we could determine the extent to which the contents of each subject's talk cohered with each other over time. While Mehan's (1979) and Sinclair & Coulthard's (1975) analytic systems were designed

specifically for use in the classroom, that of Halliday & Hasan (1976) is applicable to a variety of situations.

Grammatical structuring of our subjects' talk was identified and interpreted by means of CALAS, acronym for a Computer-Assisted Language Analysis System (Hurndon, Pepinsky, & Meara, 1979; Meara et al., 1981; Pepinsky, 1974, 1980; Strong, 1974). Like cohesion analysis, CALAS was designed to be more generally applicable in the analysis of texts. Its use is predicated on the assumption that people produce and interpret communicable written or spoken language by a structuring process of naming perceived things and of relating the named things to each other (Hicks, Rush, & Strong, 1977; Pepinsky, 1974, 1980). To account for that process, CALAS postulates the existence of a surrogate language, by means of which the original words of a text can be assigned grammatical equivalents (Strong, 1974; for a brief description of CALAS, see Appendix B).

Sampling of the data generated in each period during which data were collected was determined by (1) the presence of all three subjects, (2) clearly audible recordings that could be readily transcribed, and (3) actual meetings of reading groups to which our subjects had been assigned during the second (November) and third (February) periods of observation. Data analyzed by recourse to CALAS and to cohesion analysis were further restricted to actual interactions between the teacher and the other three subjects.

Comprehensiveness of the analysis was enhanced in several ways. First, as indicated, the analyses of discourse centered on different aspects of the texts. The focus on interactions between our subjects

provided evidence concerning the social organization of the classroom. The analysis of cohesion furnished information about the internal consistency of discourse within the classroom. Structural changes in the patterns of talk could be inferred from the grammatical analysis of the discourse. Second, the levels of inquiry ranged from macroscopic, in the analyses of cohesion and discourse across subjects, to relatively microscopic, in the analysis of grammatical changes within and among clauses.

III. Results

In examining our findings, one should keep in mind changes in the organization of instruction in reading, which occurred within the classroom over the three periods of data-collection. During the first period (September), all students participated jointly in a general program of instruction in reading readiness. By the time of the second observational period (November), the students had been divided into three reading groups: the one most advanced, a middle group, and a third least advanced. At that time, "Harry," the student from mainstream culture, and "Tom," representing the Appalachian culture, were in the middle group: "Dick" from the Black culture of the inner-city, was in the least advanced group. By the third period (February), Harry and Tom were still in the middle group, but Tom was also participating in the higher of two subgroups in the least advanced category. Dick remained in the least advanced group, but was now in the lower of the two subgroups.

A. Success in Learning to Read

In this study, we also looked at a variety of measures of reading success. One of the most overt measures is reading group

membership which was determined by the teacher and is described immediately above.

Harry, the child from the cultural mainstream, received a satisfactory reading progress report on his report card. At the end of the year, the teacher expressed no concern about promoting him to the next grade. By then, he was still a member of what is the middle reading group. The teacher observed that "He did not really try very hard: in the group and "wasen't applying himself," but basically was progressing at the predetermined rate. He had also successfully passed the reading series, criterion-referenced test of progress for moving from level to level. Using the measure of progress devised by Clay (1972), we ascertained that his performance on her Concepts About Print Survey increased only two points from the first to the third administration, while the stanine score remained the same. And when asked in an interview to explain "how to read" to someone like Mork from Ork, he responded with essentially an understanding that reading was word recognition.

Fewer opportunities to observe this subject's self-selected reading behavior were available than for the two other subjects. This was because the student from the cultural mainstream rarely finished his assignments in time to allow free selection of reading materials. When he did self-select books, he was not observed in any spontaneous text approximations. During his reading group sessions, he volunteered often an accurately, though he gave little evidence of having read silently when told to do so. This subject displayed an ongoing attentiveness to the teacher's involvement with the top reading group. Although he was seated elsewhere in the

room, this subject often subvocally responded to questions the teachers asked of the top reading group and commented on answers offered by members of that group. This subject's writing efforts seemed pleasurable to the subject when they were passed back by the teacher. This aspect of literacy learning behavior may have dictated the behaviors discussed earlier in this section.

Samples of writing were collected for the mainstream culture subject over a three week period during March and April, 1980. When Clay's written language evaluation was applied to those samples, this subject scored (5) "probably satisfactory" in directional principles, (4) "not yet satisfactory" in message quality, and (4) "not yet satisfactory" in language level. This subject frequently became so involved in intricate illustrations drawn in advance of his writing assignments that his writing tasks were usually handed in unfinished.

While there was evidence of reading at frustration-level -- i.e. the material had become so difficult for him that he was restive in responding to it -- Tom, our Appalachian subject, nonetheless volunteered frequently in his groups, continued to self-select books during his free time, and made fairly accurate approximations of text contained in those books. Also, he passed the reading series criterion-referenced test required for his placement in the middle group. Reviewing his performance on Clay's (1972) Concepts About Print Survey, we find, Tom's score to have remained the same from the time of administration at the first period of observation to that of the second administration five months later. When interviewed about how to explain to someone how to read, he responded

"You read to somebody" and "I'd teach him how to read" but could offer no more explanation than that. Tom's teacher was aware of some of his difficulties and prescribed repetition of reading levels he had already gone through. As a repeater of first grade already, he was not in danger of being retained.

Samples of his writing showed him to be concerned more with formal aspects of his writing than functional ones. He appeared to be unwilling to take risks in his writing efforts. For example, he produced a "smiley face" mark from the teacher for an assignment to "draw a picture and then write a story about it." Another effort was an elaborately drawn race car with the caption "This is a race car." He then reproduced this basic picture and caption on three later responses to similar assignments. The caption was reduced on the final effort to "This rascar" which received a frowning "Needs Improvement" mark from the teacher. Another format was then attempted.

Samples of the subjects' writing were collected over a three week period in March and April, 1980. Application of Clay's (1972) technique for evaluating writing to that sample resulted in this subject scoring (5) "probably satisfactory" in directional principles, (4) "not yet satisfactory" in message quality, and (4) "not yet satisfactory" in language level. The topics and actual writing produced were somewhat repetitious from day to day as noted in the classroom reading and writing sections of this subjects profile.

Though Dick, the Black inner-city child, ended the year in the lowest reading group, he seemed to have maintained enthusiam for becoming literate and displayed an awareness of his own growth, as evidenced in part by comments made during the last administration of

the Concepts about Print Survey (Clay, 1972). Also, when interviewed about what it is to read, he first responded with "We mark stuff," which in his experience is a very accurate observation. When probed, however, he finally answered that he "thought" and then "sounded the word out." He went on to say that "You have to know the sounds so you could sound the word so you could know it." This is the most insightful and complicated explanation offered by any of our students -- and in the second period of observation at the beginning of the third month of the school year.

In November, it was observed that he randomly self-selected books during free time, but made no attempts at text approximations. During the February observation period this subject was observed to selectively choose specific books from which he made extensive text approximations. Observations of his writing behavior found him "making books" which he then encouraged near-by students to hear him read or read for themselves. He did this whether or not his efforts were rewarded by the teacher.

Samples of the subject's writing were collected over a three week period during March and April, 1980. Applying Clay's (1972) Written Language Evaluation technique to that sample resulted in this subject scoring (5) "probably satisfactory" on directional principles, (4) "not yet satisfactory" on message quality, and (4) "not yet satisfactory" on the language level.

Despite his enthusiasm and progress, Dick received a "needs improvement" on his progress report at the end of nhe first semester. In fact, the teacher had expressed concern to his parents that he might have to be retained in first grade, though he finally was placed in, but not promoted to second grade. Dick's score on the

Concepts About Print Survey (Clay, 1972) increased enough to move him from the middle of the fourth to the top of the fifth stanine on the test, although he remained one stanine below the other two boys.

B. Interactive Patterns of Discourse

1. Social Organization in the Classroom

Mehan's (1979) system isolates for analysis an interactive taking of turns in the discourse, which is partitioned into categories of initiated talk, reply, or evaluation. In overview, 77% of all turns allocated by the teacher across the three periods of data collection were individual nominations to respond. In other words, for the majority of times she elicited a response from the students, she called on a specific child. Only 23% of the total turns were in an "open bid" category -- open to anyone's responding. (See Appendix C for sample of discourse coded according to Mehan's format).

Initiation of discourse was overwhelmingly begun by the teacher --over 90% of the time during reading instruction. Thus, the students initiated exchanges about 9% of the time.

Mehan's (1979) research had suggested that teachers typically used directives to make the opening and closing of lessons. He also noted that behavioral directives were not typically found within the body of an academic lesson. However, our teacher did use directives within lessons during all of the observational periods.

A. Collection Period 1

During the first period of observation, the teacher used two types of allocated turns: 1) individual nominations and 2) open

bids. Both her individual nominations and open bids were in the category of speech acts known as product elicitations. In each case, that is, there evidently was a specific answer or product that the teacher "had in mind" when she allocated a turn for discourse to a student. Also, the teacher made individual nominations almost twenty-five times as often as she made an open bid for a response from a group of students.

During this period, our student subjects demonstrated differential patterns of initiation of exchanges with the teacher. Harry, the mainstream culture student, initiated talk five times, with the teacher responding with a turn or two, then "binding off" his talk. In one case, she rejected his initiation. Tom, the Appalachian child, initiated talk only one time, while Dick, the Black child, did no initiating at all.

The teacher utilized directives throughout the whole class reading lesson for purposes of controlling student behavior.

B. Collection Period 2

During the second collection period, the teacher used the same two procedures of turn-allocation that she had in the first: 1) individual nominations and 2) open bids. And, again both procedures were used to elicit specific products in the students' responses. In this sample, individual nominations out-numbered open bids seven to one, representing some dimunition of the almost exclusive use of individual nominations in the first period at the start of the school year.

During this collection period, we found more student-initiated exchanges. For example, Harry, the mainstream culture subject,

initiated talk seven times while the Appalachian subject, Tom, initiated talk with the teacher a total of five times. Accepting all the latter's initiations, the teacher also carried on reading instruction procedures, commonly called synthetic phonics, exceeding four turns in the discourse. In each case, they were in response to Tom's saying he was "stuck" on a given word in his reading text.

Finally, Dick, the child from the Black culture of the inner-city, initiated talk with his teacher four times during this period, which she accepted, replied to, and bound off each in one turn.

The majority of the children's initiations were oriented to the task set by the teacher in each reading group. If they were not, she terminated their responses quickly or simply told them they were not on the topic. Again, the teacher interspersed directives throughout the lessons with both reading groups in which our subjects participated. However, directives were used differentially in that she used them to control behavior in the middle ability group's lesson, while using them to direct activity in the lowest ability grouping. In the latter group, her instruction utilized worksheets and flash cards, both of which drew out extensive directions for their use.

C. Collection Period 3

During the third data collection period, after the mid-point of the school year, the teacher continued to use individual nominations and open bids to allocate turns. In this sample, individual nominations outnumbered open bids at a ratio of five to one representing another dimunition, although less dramatic than previousl-, in her calling on specific students. Thus, turn-taking had become more

open than at the beginning of the scoool year. However, both procedures were again used to elicit specific products, or responses she evidently had in mind.

Student initiations of discourse increased in this data collection period. Harry initiated talk eight times in this sample, but only half of his initiations were accepted by the teacher. The other four times she did not acknowledge his bid, thus not allowing him access to the discourse via his bid.

Tom also initiated turns eight times, but half of those were requests to go to the bathroom, so these were materially different from either Harry's or Dick's initiations. The other four were procedural questions such as "Are we going to read this whole page?" Tom volunteered no personal or content-oriented initiations. The teacher accepted all his bids, responded by one turn, and then bound them off.

Dick initiated talk seven times, each being accepted by the teacher and responded to by up to three turns. His initiations largely involved the material in the reading text; his were the most task-oriented initations.

During this collection period, the teacher used no directives with the middle ability reading group, but continued to do so with the lowest ability group of which Dick was a member.

2. <u>The Organization of Academic Work</u>

In this section, the results of analyzing our data following Sinclair & Coulthard (1975) are reported. (See Appendix D for a sample of discourse coded according to Sinclair & Coulthard's format.) First, the total number of teacher-initiated and student-initiated

exchanges were determined and compared. Across all the data collection periods, teacher-initiated exchanges accounted for almost 80% of total exchanges, while student initiations made up the remaining 20 percent. The range of teacher-initiated exchanges, was from a low of 71.5% for the last low reading group sampled to a high of 92% in the first data collection period. The student-initiated exchanges mirror that range. However, there appears to be no consistent change in the pattern of teacher-initiated exchanges over time in our sample of reading lessons in that they remain the majority of the exchanges.

(Insert Table 1 about here.)

The patterns of the different exchange-types found in the data are displayed in Table 1. It is evident that all exchange-types found in the discourse are utilized primarily by the teacher, except for the one called Listing. However, when the students engaged in that type of exchange, it was only under the circumstances of playing a word recognition game called "Around the World." And although a child did call out a word to initiate the exchange, the game was controlled by the teacher who nonverbally allocated the turns. The other major student-initiated category is that of Inform. This occurred especially when students either volunteered information about themselves or when they initiated a control sequence in which informing could almost be taken literally; its more informal name is tattling.

The data identify the teacher as the only one to initiate directive exchanges during the reading lessons sampled. She was also the only one use Checks which are actual questions for unknown

information. In Sinclair and Coulthard's (1975) analytic framework, elicitations may be in question form but are not actual questions because the teacher already knows or has in mind how a student should respond. However, a check is an actual question to which the answer is not known by the questioner. Repeats were also used only by the teacher in our samples.

Analysis of the predominating exchange-types for the teacher reveals discourse elicitations comprised virtually half of her total exchanges. Directives were over 20%, re-initiations were over 18%, while informative discourse was only 8.5%. Checks, actual questions, made up only 1% of her total production of exchanges, and repetitions constituted less than 1%. The inform exchanges are those which impart information on the topic and tend to be highly instructional in nature.

Teacher re-initiations consisted largely of individual acts labeled clues, prompts and nominations. Nominations were calls to individual children to respond. Clues were found predominantly in certain sections of the lessons, usually during silent reading times when children asked for help in decoding a word. And prompts were often directives for action such as "You read Ben's part now."

Turning to exchanges involving the students, we found the predominating type to be that of listing, at 43%. If we consider those which were more under the control of the student, however, we found elicitations to be the second most prevalent in our data at 28% of all student-initiated exchanges. Re-initiations comprised 15.5% and informatives were at the bottom at 13%. In our sample, the students produced no checks and no repetitions.

Consequently, the overall most prevalent type of exchange for both teacher and students was that of elicitation. Other than that, the two sets of major exchange-types were not similar, as the teacher made different kinds of initiations from the students.

Looking at each collection period, and then across them, we analyzed the predominant types of exchanges in each for the teacher and the students. In the first period, we found the number of teacher elicitations and directives to be very close -- 36.5% and 33.3% respectively. Much further behind came re-initiations at 16% and informative exchanges at 14%. Directives, in the Sinclair and Coulthard framework, serve to elicit a nonverbal reaction, so in this period of reading instruction, she was giving many directions for the children to follow nonverbally. Student-initiated exchanges were very few in number in the first period -- only nine out of over one hundred total exchanges. Among those few, elicitations and informatives predominated about equally. They were almost entirely produced by one child, Harry, the middle class boy from the cultural mainstream.

In the second data collection period, in the middle reading group of which Harry and Tom were members, the dominant teacher initiated exchange type was elicitation at 41%, with re-initiations following at 33%. These latter were mostly clues and prompts in response to elicitations for help in decoding. Directives were 17%, informative 5.5% and checks 3%. The children produced, as had the teacher, predominantly elicitation exchange types at 52%, with listing being 44% as they played "Around the World." Informatives comprised the remaining 4%.

In the least advanced reading group of which Dick was a member, the teacher produced mostly directives (52%), reflecting the fact that they were working with worksheets and flashcards and were not reading from a text. That was typical of the reading instruction lessons during that time of the year for that group. Elicitations comprised most of the rest of the exchanges, with informatives and real questions, checks, being almost negligible. As "Around the World" was played within the sample, listing accounted for 68% of the student-initiated exchanges. The rest were elicitations and re-initiations.

During the last data collection period, as shown in Table 2, both reading groups were making use of reading texts, and the teacher's patterns of exchanges were similar for both. Although directives and re-initiations were reversed for the two groups, the patterns and percentage of exchanges were quite similar. This did not hold as much for student-initiated exchange types (see Table 3).

(Insert Tables 2 and 3 about here.)

In the low reading group, "Around the World" was played again, but not in the middle reading group. For the latter, elicitations comprised the single largest exchange type, while for the low reading group, it was the smallest. Re-initiations for both were similar in proportion and were largely comprised of the children carrying the exchange forward by reading aloud from the text as instructed by the teacher. However, both elicitations and informative exchanges account for 74% of the exchange-types in the middle reading group, but only 18% for the low reading group.

An analysis of how the teacher interacted with each of our

subjects, revealed for Dick, the Black child in the low reading group, and early pattern of virtually no student-initiated exchanges, until the last period of data collection, during which he initiated half as many as the teacher did with him. But at that point in the study this group consisted of three lower-class black males; also they were in a reading book, not on worksheets. By contrast, both Harry and Tom, in the much larger middle reading group, initated exchanges during all three periods.

On the whole, the teacher evaluated their replies to her initiations favorably, with positive evaluations outweighing negatives by at least two to one. Such evaluation was similar for each of our subjects. Also, most of the children's replies were either evaluated or accepted but not ignored by the teacher, generally consistent behavior on her part.

C. Cohesion in the Discourse

From each period of instruction in literacy, the interactive discourse between the students, Tom, Dick, and Harry, and the teacher was selected for cohesion analysis, thus deleting discourse between the teacher and other students, or among the students themselves. Such selection allowed focus on the degree of interrelatedness of the teacher's talk and that of our subjects. Also, because of the capabilities of the microphones and their placement, other students' discourse was frequently unintelligible.

Density of the cohesion was established by determining the mean number of cohesive ties per utterance. In Cohesion in English, Halliday & Hasan (1976) define a tie as being "... best interpreted as a relation between the two elements, " the two elements being

"...the cohesive element itself..." and an element "...which is presupposed by it" (p. 329), it being the tie. The average number of ties per utterance was one, with the range being from the high of 1.5 ties per utterance in one reading group session to a low of .5 ties per utterance in another. Across the data collection period, little in the way of change was noted, either in terms or increase or decrease in density of cohesion.

Predominating types of cohesion used both by the teacher and by Tom, Dick and Harry were also determined. See Table 4 for three major types to emerge from the data.

(Insert Table 4 about here.)

1. Lexical Cohesion

As can be seen in Table 4, slightly over half of the entire ties produced by both the teacher and the three students were lexical ties. However, lexical ties account for 67% of the teacher's total ties, while for the students, this type did not account for their predominant tie type which was cohesion through ellipsis. In fact, by the third data collection period, in the middle reading group, lexical cohesion dropped to a low of 19%.

Within the category of lexical cohesion, the predominating type of lexical cohesion used was that of identical item, e.g., repetition of a word used earlier in the discourse. For example, the teacher often said something like:

Is that Bob?

Yes, it does look like Bob.

Where does ... it look like Bob's going to?

In that case, the identical items producing this cohesion are all Bob, rather than her saying "Is that Bob? Yes, it does look like him. Where does it look like he's going?"

2. Ellipsis Cohesion

Cohesion via ellipsis was, overall, not a predominant type of cohesion but did account for about 44% of the ties made by the three students. This type of tie was achieved primarily through propositional ellipsis in which all the propositional element is ommitted to yield a Wh- question answer A typical example is:

Teacher: What do those letters say?

Dick: Lion. In fact, ellipsis of this and other sorts to achieve an answer to a Wh-question or a yes-no question is the predominating type, reflecting in part the structure of the reading lessons which yielded the data we analyzed. By the third data collection period, this type of cohesion accounts for 64% of all cohesive ties for all three of our subjects. This Reflects,again, the structure of the reading lessons.

3. Reference Cohesion

Cohesion through use of reference was, again, a major type for the teacher. About 45% of her total ties were of this type and was achieved predominantly through use of pronouns as referents and demonstratives as referents, usually in the form of that. Across time, also, little change in this pattern was found. This was a type of cohesion little used by the three students. representing only 15% of their total cohesive ties.

According to Halliday & Hasan's (1976) scheme for the coding of cohesive elements, five major types of cohesion are possible.

Two types, Substitution and Conjunction, almost never appear in our data. Within the three types we do find in the data, again, relatively few of the possible subtypes detailed by Halliday and Hasan (1976) were used either by the teacher or the students. For example, there are at least 12 types of reference ties in the coding scheme, but in our data, only the pronominals and a few demonstratives predominate. (See Appendix A for Coding Schema and a sample of discourse coded according to that schema).

Taking the distance of the ties and their presuppositions into account, we found the majority of ties, about 63%, to be what Halliday and Hasan call immediate, that is, the presupposed item for the tie is in the preceeding utterance, no matter who uttered it. This percentage held relatively constant across the data collection periods. The second most predominant distance was what is called mediated -- with utterances in between -- but having the same presupposition. These were often produced by the teacher tieing with herself, usually to make a pedogogical point -- as in;

Teacher: No. Bob. -b.

Dick: -b.

Teacher: A -b sound. It begins with a -b sound, and it ends with a -b sound.

Relatively few were what Halliday and Hasan call remote, non-mediated, which means the reference is not in the discourse sequence analyzed or is far back in the sequence. There few of those, and virtually no cataphoric ties at all.

Domination of the ties was also determined. A tie was considered Teacher-dominated if 1) any of the three boys tied to her discourse,

of 2) if she tied to her own discourse. Student-dominated ties were those in which 1) the teacher's discourse tied to what any of the boys had said previously, or those in which 2) the students tied to their own discourse. Table 5 indicates the majority of ties were teacher-dominated. However, the range is from a low of 60% in the first period to a high of 86% in the low reading group, during the second data collection period. In order to account for this range, we looked at the pattern of ties with each of the three boys.

(Insert Table 5 about here.)

Harry, the boy from the cultural mainstream, accounted for the majority of ties with the teacher in the first collection period. This was achieved largely through his domination of ties by introducing several topics into the discourse. The other boys did not initiate during this period but did contribute in such a way that the teacher did tie to some of their responses which were oriented to the reading lesson material. Again, in the second period, Harry dominated more ties with the teacher than did Tom, the lad from the Appalachian culture. And in his small reading group, Dick, the Black inner-city child, dominated only 14% of the ties with the teacher. In the third period of data collection, Harry again initiated more ties with the teacher than did Tom, but this he also was tied more to by the teacher than Harry. This seems to emerge as a pattern for Harry -- more discourse interaction with the teacher than Tom either ties to or elicits from the teacher. On the other hand, Dick made a change in his pattern of ties in the reading group by the third data collection period. At that time, he actually dominated 34% of all the cohesion produced, and he also initiated topics with the teacher.

Continuing to analyze the three subjects' cohesion, we looked at predominating types of cohesion for each of them. The results are displayed in Table 6.

(Insert Table 6 about here.)

For all three students, lexical cohesion predominates in the first data collection period, but begins to give way to ellipsis by the last one. Nor, for any of these boys, does there appear to be a consistent preference across time for a particular type of cohesive tie. We suspect that, in large part, the type of student-generated tie is more dependent on the teacher's conduct of the reading lesson than on the student's choice from a wide range of possible ties.

D. Grammatical Structuring of Discourse

Results of applying CALAS (the Computer-Assisted Language Analysis System) to our data are presented in this section.

Table 7 displays results of the analysis of verb usage by the four subjects for each of the three periods of data-collection and for all periods combined. Each cell exhibits a proportion of the total frequency with which verb phrases are used on any given occasion. Each of the tabular displays is further partitioned by research subject. For example, we note that in the first collection period, Ms Cook, the teacher, accounts in her discourse for 15% of the total use of state verbs wheras Harry, the white male from the cultural mainstream, only accounts for 8% of the total of verbs used in that period.

The table itself has been adapted from Cook's (1979) "Matrix Model of Case Grammar," whose construction resides on the assumption that there are essential and inherent relations between verb and

noun phrases in the deep structure of the English language. Following Meara et.a. (in press), we also have redefined these verb phrase (see Appendix B).

The results are strikingly consistent over the three periods of observation. Ms. Cook, the teacher, uses nearly 9/10 of the verbs employed (86% in period 1, 89% in period 2, and 86% in period 3, with an over-all average of 86%). Table 8, which contains a similar kind of tally for other than verb phrases, indicates her to be using consistently nearly 9/10 of these (89%, 86%, and 88%, with an overall frequency of 87%). In Table 7, we also note that the teacher uses most of the "basic" verbs of state, action, or process (61% in period 1 and more than 50% in periods 2 and 3).

Again most of these are action verbs in the first two periods (37% and 38%); by session 3, however, she isusing mostly verbs of state (27% as compared to 14% for action verbs in the third period). The contrast becomes even sharper when we add in the other verb types: 47% of the time, she uses action verbs in period 1 and 56% in period 2; by period 3, however, her relative frequency of combines action verbs has decreased to 34%. An examination of the text reveals her to be spending much of her time in the first 2 periods demanding action, including the nomination of persons to read aloud.

Note in Table 7 that proportionately little of her talk (8%, 7%; 10% overall) is devoted to process -- things happening to people or things. By and large, the people in her talk either are or are supposed to be doing something. They do have experiences (45%, 30%, 31% 30% overall), but mainly because the teacher admonishes her students to be reading aloud or otherwise saying something, or to be

looking at or seeing something. Table 8 shows her to be using mostly nouns among the phrases other than verbs, and that most of these identify the objects, rather than the agents, experiencers, or beneficiaries of a state, action, or process.

(Insert Tables 7 and 8 about here.)

Some embellishment of her talk is revealed in the proportion of it that contains adverbial or prepositional phrases (27%, 22%, 23% -- 25% overall). In the main, however, her talk remains singularly uncomplicated over the three occasions. As Table 9 reveals, she uses on the average but 2.06 phrases other than verb phrases -- noun phrases included -- per clause, slightly more (2.56) in the first session, but less than two (1.89, 1.98) in the second and third sessions.

By comparison, our student subjects have relatively little to say in any or all of their discourse with the teacher, as they haven't much chance. In their whispering (not discussed here), however, they reveal themselves able both to say more and to do so in a more complicated manner.

(Insert Table 9 about here.)

IV. Discussion

In our introductory remarks, we conceptualized teaching in the classroom as a process of social influence in which, optimally, teacher and students act in concert to reduce what each perceives to be a discrepancy between an actual and a desired state-of-affairs (cf. Pepinsky & Patton, 1971). We alluded further to teaching as a process in which social policies are not only implemented but may be reformulated. Meara et al. (in press) advance a similar argument

about counseling as a policy-making process, which suggests that phenomena such as teaching and counseling have common formal properties.

In that sense, what either set of participants perceives to be a discrepancy to be reduced may also act as a contingency --more strongly, an exigency -- which requires something to be done about it. In the present case, teaching policy becomes "a general premise in the form of ground rules that either presuppose -- or are presupposed by -- a category of social actions" (Pepinsky, Hill-Frederick, & Epperson, 1980, pp. 54-55).

In his Pre-view of Policy Sciences, Lasswell (1971) described the policy sciences as properly employing a variety of methods, as being rooted in explicit social contexts, and, within any such context, as being alert to problems arising in that context. We have followed these guidelines in this research, having been alerted to the context of public schools in a large urban setting in which children with diverse cultural backgrounds come into contact with one another in a classroom. Here, they are confronted by a demand arising from within the dominant culture of this and other cities. We recognized the problem to be exacerbated in the context of a newly desegregated school system. In the case of the school and classroom in which our research was conducted, White and Black children were being bused in from an adjacent neighborhood whose members were identified as being in the cultural mainstream. We hoped to be able to describe what impact this setting would have upon three male students representing diverse cultures. To enrich our purview, we chose three discrete methods of analyzing talk in the classroom between these students and their teacher, again in a manner consistent with Lasswell's (1971) exhortation.

The results of our various analyses tell a remarkably consistent story. Mehan's (1978) form of analysis revealed that over time there were relatively few "open bids" on the part of the tacher for initiation talk in the classroom; most of the students' discourse consisted of their responses to nominations by their teacher to have them talk. Our teacher continued to issue procedural directives within lesson times and over all periods of observation. An almost identical pattern of teacher- versus student-initiated exchanges of talk was found when Sinclair & Coulthard's (1975) method was employed. At the same time, there was relatively little cohesion in the talk, either of the teacher over time or between the teacher and her students, save that latter tended to cohere as requested to particular demands, queries, or comments on the part of the teacher. Mainly, however, these took the form of propositional ellipses in which the teacher asked questions, with particular, largely one-word answers in mind. The teacher did employ a reference form of cohesion entailing the use of pronouns and demonstratives, particulary that, as referent.

Spontaneous bids on the part of students, e.g., Harry's earlier bids for "ties" with her, tended to be relatively infrequent among the students; even Harry's talk evolved into the making of ties with what the teacher had said rather than what he elicited from her. Saliently, as indicated in the first two sets of analyses, and by CALAS, the teacher talked by far the most, and on all occasions. Mostly, the talk centered on states or actions, with a relatively heavy, accompanying reference to objects. There was rarely talk about processes -- things happening to people or things, the

experiences people have, or the benefits they might reap therefrom. None of the respondents, including the teacher, was stylistically complicated in his/her utterances. The teacher, for the most part, demanded, commanded, questioned, and exhorted, eliciting largely single words in response from the students.

As far as a mutually-devised "social construction of reality" is concerned, in this culturally-diverse classroom, there does not appear to be much reciprocity between the teacher and students in minimizing perceived discepancies. The teacher clearly controls the discourse during the three data collection periods, as shown in amount of talk, by percentage of teacher-initiated exchanges, and by percentage of teacher-dominated cohesion ties. Despite their cultural diversity, the three students, in turn, appear to have learned this --as a major rule of discourse -- in that by the third data collection period they are volunteering virtually no personal information in the form of student-initiated exchanges, but are responding to her initiations with one-word answers which are the product responses she is apparently seeking. It seems that each of the student subjects has learned to respond appropriately through his discourse during periods of literacy instruction, although each is different in regard to how effectively he is learning to read. Their interactional competence, as defined and shaped by the teacher, appears to be developing well.

Whatever else these culturally diverse students might have learned in the classroom about how to be literate thus appears to have been overshadowed, in the teacher's judgement, by her own phenomenal perspective on the course of events. Our analyses of the

students' and teacher's discourse suggest her to have been remarkably adept at modifying and shaping the students' verbal behavior over the three periods of observation. As discussed elsewhere (DeStefano, Pepinsky, & Sanders, 1980), she seems to have been preoccuppied with laying down and enforcing as matters of policy two sets of ground rules in her classroom: (a) of how students should behave in an orderly manner (procedural policy), and (b) of how they should become literate (substantive policy). The students' interactive discourse indicates them to have learned these rules, but masks their relative success -- defined by other criteria and in terms of independent measures of their accomplishment--in becoming literate.

Given all of the evidence available to us, we can but infer that evaluative judgements about the teacher--ie., as "good" of "bad" --are premature. Given the tense circumstances of court-ordered racial desegregation in the school system, there was a singular absence of disruptive behavior among her students throughout the school year. In fact, and end-of-the-year party, which several of us attended, was characterized by frequent and widespread marks of affection toward her by her students. On the other hand, her teaching seemed narrowly focused on rules of conduct and of learning how to be literate, without substantial evidence that her students were being helped to perceive and comprehend as coherent text the words or phrases or sentences to which they were being exposed one-at-a time.

At this stage of knowledge about analyzing discourse in a classroom or elsewhere, we have deemed it more important to show how such discourse may be sensibly identified and interpreted by reference

to three case studies in the context of interactive behavior within a single classroom, than to attempt a definitive investigation of how culturally different children are taught and learn to be literate. We have sought rather to offer a methodological contribution to the analysis of discourse itself, and to use our comparative analysis in raising prior questions that need to be asked before one leaps to conclusions about what is happening and what ought to be done about it. For now, we can leave off with the question of whether changes in the school system--the larger organizational context within which any single teacher attempts the task of teaching students to be literate--may be more critical than changes in the behavior of any single teacher. This issue becomes all the more central if students' opportunities to become literate are to take into account children's potential unhamperec by the masking effects of their cultural backgrounds. More to the point, a recognition of such cultural differences may result in a redefinition of what it means to become literate and/or to adapt successfully to societal demands.

Future research into these issues of language learning and literacy learning by culturally diverse children will, we feel, necessarily involve data collection in the homes as well, and an inclusion of the kindergarten year also. We feel this is important because, in part, at the same time that the child is learning to become a competent member of the classroom community through the acquisition of appropriate registers, interactional, and academic skills, (s)he is also learning crucial forms and interactional skills within their own culture. "The socially adept individual implicitly communicates an understanding of commonly accepted group

norms and practices. This skill reflects the child's capacity to interpret the requirements of the particular situation in which the child is involved as a participant in conversation" (Borman, 1979). Children learn to understand the circumstances in which a certain type of behavior will be tolerated and when it will be inappropriate. This knowledge constitutes "an aspect of the child's social competence" (Borman, 1979). All in all, a complex network comprising an understanding of group norms, social roles, personality theory, etc., constitute the constellation of social and interpersonal skills required in conversation.

The fact that situational expectations and structures for interaction may be different in the home setting than in the school could quite possibly interfere with the acquisition of competence as it applies to literacy learning. "We do hypothesize that over time children develop particular discourse styles of reasoning, explaining, and accounting that form a basis for their social understanding. We are aware that children even at four or five are unlikely to confuse the actual context of home and school, but their experience in the home of styles of discourse and reasoning provide and enduring set for the interpretation and understanding of other novel, discourse occasions" (Cook-Gumperz et al., 1979).

We also feel it is important to study a larger number of children and teachers as our case study approach yields results which may not be widely generalizable--or they may be. For each subject, we have many data, but we don't have many subjects within the different cultural categories, for example. We have good reason to judge the teacher's behavior as fairly "typical" or representative, but the

children are another question. There is no question but that we've learned a great deal about discourse and literacy in one classroom, but must look farther, perhaps, to determine the applicablity of our findings--at various levels--to other first grade desegregated school situations. We hope to be able to do this in subsequent studies.

We also learned much about our analytic formats as well, both for this study and for their applicability and usefulness in future research. In our estimation, both the Mehan (1979) approach to classroom discourse analysis and that of Sinclair & Coulthard (1975) were not, for our data, as revealing as we had hoped. In fact, in view of the laborious coding process involved, especially in Sinclair and Couthard's framework, we could have gained almost as much information simply by "eyeballing" the typescripts. In our case study, it was obvious the teacher dominated the discourse, and that the children responded increasingly in a manner which she approved of. Of course, the coding process and then subsequent analysis did serve to confirm our impressions, but the cost of doing so was high. In most research, such an expenditure of time is not feasible for so many data.

However, for questions of social interaction in a variety of classrooms, the Mehan framework can be a useful analytic tool. For our single classroom, it only confirmed the obvious.

There are more serious questions we must raise about Sinclair & Colthard's (1975) analytic format as a tool for classroom discourse analysis. For example, they have no speech act category for commands to elicit verbal responses, as opposed to nonverbal--which is a

directive. In our data, we found many such commands or "demands" --and not prompts (their category)--for answers.

To continue, the differenck between their categories of accept or evaluate as responses are very weak and, thus, difficult to code with either reliability or validity. And isn't accept a positive evaluation in many cases anyway? Also, we found many accepts and evaluates to be nonverbal. Our teacher would frequently, if she felt the answer were right, move on to the next child without comment. Intentionally, she was positively responding to the child's reponse--but this had no place in the coding.

Other "fuzziness" or problems of imprecision we found bothersome included the lack of differentiation among replies in the coding scheme. There are, we feel, different types of repliks possible which are important in understanding the process of discourse in the classroom. Mehan (1979) does cover this issue, but the Sinclair and Coulthard format does not. This format also does not differentiate interrupts from instructional discourse, which were often materially different in our classroom.

Another major problem was that the format is not constructed to be able to easily deal with speech acts having multiple functions--which many of them have. Thus, in coding, the coder has to make a choice as to which function predominates, again giving rise to at least coding reliability problems. Different coding possiblities for an utterance are also often not clarified by the format.

Two other major problems we identified were, first, that when pupils initiated the exchanges, the format broke down as their

intentions in opening exchanges were different from the teachers. But this coding schema cannot handle the differences in elicitation intentions. The second is that the format does not deal at all with certain categories of speech such as subvocalizations which were often in response to overtly uttered discourse or with the control sequences the teacher frequently used. Sinclair & Coulthard's (1975) framework seems more geared to academic content rather than to the "disciplinary" discourse efforts frequently found in classrooms.

Use of Sinclair & Coulthard's (1975) framework, and Mehan's (1979) as well, along with much of the work in sociolinguistics using the concepts of speech act and speech event, prompted us initially to conceptualize our analysis as revolving around identification of speech acts and events. During the actual analysis, however, we found ourselves using the concept of "utterance" as the basic category for analysis. Our definition was based on our competence as native speakers as to what constituted a sentence or expletive, or whatever. And our data arrayed themselves quite nicely into utterances--no artificiality in the unit.

"Oh" was considered an utterance as was what are traditionally considered sentences. In essence, we didn't find the notion of acts or events particularly useful constructs for the questions we were asking or for coding for cohesion analysis or CALAS. And the sometimes arbitrary nature of their assignments in the Sinclair & Coulthard (1975) schema further weakened our interest in them.

All in all, we conclude that the Sinclair & Coulthard's (1975) mode of discourse analysis has enough reliability and validity problems to cause us to drop it from subsequent research. The

effort required simply isn't justified by the results yielded by the approach.

On the other hand, discourse analysis via colesion analysis (Halliday & Hasan 1976) was much more revealing of discourse rules, we felt. It, too, is highly time-consuming as an analytic tool, but yields insight into the degree of interrelatedness of the discourse among speakers which can be an index of at least one type of language rule learning. Furthermore, it is a format designed for text analysis, spoken and written, of all types, not just that found in the educational domains. All in all, we felt it gave us some of our most insightful findings about the discourse dynamics in our classroom, and we intend to use it again in our research.

CALAS (see Appendix B) was the other language analysis format which yielded insight into the process, though at the sentence level. Because it "works" at a clause level, it's highly complementary to a format such as cohesion, and it, too, can be used for analysis of language, spoken and written, generated in a variety of situations.

These latter two formats are those we intend to use again in subsequent research on language and policy issues.

Note: If you wish to see further data on the form of typescripts or more data analysis, we should be happy to provide it. We are concerned about preserving confidentiality, so we'll have to limit access to the videotapes.

DISSEMINATION OF RESEARCH

Dissemination has been and will continue to be, we hope, extensive. It began with a paper presented by J. DeStefano, entitled "Making Policy: The Language of Cultures in Contact on the Educational Domain," at the invitational International Conference on Language and Power, the Rockefeller Conference and Study Center, Bellagio, Italy, on April 4-8, 1980. A few days later, at AERA, Harold Pepinsky presented "Discourse Rules Taught and Learned During Literacy Instruction" at the symposium, "Discourse Processes in School Settings," chaired by DeStefano. This paper is in the ERIC system.

Then at the International Reading Conference in St. Louis on May 5, 1980, DeStefano presented "Transition to Literacy: An Analysis of Language Behavior During Reading and Writing Instruction in a First Grade Classroom", (in ERIC system) at the Preconvention Institute on Interrelationships of Oral and Written Language. At the NCTE conference in Cincinnati, November, 1980, both DeStefano and Pepinsky conducted a workshop for teacher/researchers on the findings and methodology used in this project.

In a slightly different vein, Pepinsky presented "In a Desegregated First Grade Classroom, It's Business as Usual", at the International Society of Political Psychology Conference in Boston, June 4-7, 1980.

As far as publications are concerned, a paper entitled "Discourse Rules for Literacy Learning in the Classroom" presented at an invitational conference, Language in the Classroom, at the University of Wisconsin, Oct. 15-18, 1980, will appear in a volume, Communicating in the Classroom, edited by Louise Cherry Wilkinson for Academic Press, late in 1981.

DeStefano and Pepinsky have also agreed to do a chapter, "An Analysis of Policies Reflected in Classroom Language Interaction", for Advances in

Reading/Language Research, Vol. II, edited by Barbara Hutson for JAI Press. It's due to appear in late 1981 as well.

DeStefano is also planning to do a column in Language Arts in late 1982 on the findings and implications for teaching, and she and Pepinsky have also agreed to participate in a conference on sociolinguistics and reading research at Syracuse University on May, 1982. The paper presented there will be on the findings and analysis provided by this project.

If the Commission on the English Languages proposal to NCTE is accepted, DeStefano will present a paper in Boston at the 1981 annual conference on "English first" as social policy in U.S. education, drawing on many of the data in this project.

Pepinsky will be attending AERA in 1981 as well to discuss our findings.

Sanders, whose dissertation grew out of the project has also made several presentations, the one at the National Conference on Reading, San Diego, December, 1980, entitled "Concept of Word and Lanugage of Instruction." She will also make a presentation entitled "Classroom Language Use and Language Literacy Instruction" at the AERA conference in Los Angeles during April, 1981.

It's clear, however, that dissemination will continue, especially as we analyze even more of our data as yet untouched, re-evaluate some already analyzed, re-interpret findings, and continue work in our Program on Language and Social Policy at the Mershon Center. We have currently submitted another proposal to NIE which is a modification and extension of this project, and also plan to approach several foundations to seek funding for further research as we frankly feel we've only begun to ask questions and gather data on literacy, discourse learning, cultures in contact, and language policy.

We also intend to prepare shorter articles for submission to teacher-oriented journals such as The Reading Teacher and Language Arts as well as those oriented toward journals such as Language in Society.

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TABLE 1
TYPES OF EXCHANGES (after Sinclair & Coulthard 1975)

Type	Teacher-Initiated	Student-Initiated
Elicit[1]	87%	13%
Direct[2]	100	0
Inform[3]	71	29
Re-Initiate[4]	82	18
Check[5]	100	0
Repeat[6]	100	0
Listing[7]	0	100

[1]An Elicit exchange type is headed by an elicitation or question functioning to request a language response.

[2]A Direct exchange type is headed by an imperative functioning to request an action, non-language response.

[3]An Inform exchange type is headed by utterances designed to be informative, to impart information to listener/s.

[4]A Re-Initiate exchange type is headed by utterances designed to re-establish the line of dicourse which a teacher or student feels may have gotten "off the track." It's often shown by teachers calling sequentially on students.

[5]A Check exchange type is headed by an actual question seeking unknown information, such as "Are you finished?"

[6]A Repeat exchange type is headed by an utterance designed to elicit again an utterance made by someone, such as "What did you say? I didn't hear you."

[7]A Listing exchange type is often headed by an utterance which "demands" students actually list items as the response.

TABLE 2

PERIOD 3 TEACHER EXCHANGE TYPES

(After Sinclair and Coulthard 1975)

Exchange Type	Middle Reading Group	Low Reading Group
Elicit	57%	61%
Direct	18%	11%
Re-Initiate	14%	17%
Infrom	10%	11%

TABLE 3

PERIOD 3 STUDENT EXCHANGE TYPES

(After Sinclair and Coulthard 1975)

Exchange Type	Middle Reading Group	Exchange Type	Low RG
Elicit	48%	Listing	59%
Re-Initiate	26%	Re-Initiate	24%
Inform	26%	Inform	11%
		Elicit	7%

TABLE 4

TYPES OF COHESION

	Total Cohesive Ties	Teacher Ties	Student Ties
Lexical Cohesion			
Period 1 -	61.5%	75%	62.5
Period 2 - MRG	56	57.5	50
- LRG	50	50	33.3
Period 3 - MRG	53	66	19
- LRG	68	85	36
% of Total Ties Produced Across All Periods	58	67	40
Ellipsis Cohesion			
Period 1	17%	11%	18%
Period 2 - MRG	12	6	39
- LRG	17	0	33.3
Period 3 - MRG	23	5.5	64
- LRG	19	5	64
% of Total Ties	17.6	5.5	44
Reference Cohesion			
Period 1	21%	14%	15%
Period 2 - MRG	30	34	11
- LRG	33.3	50	33.3
Period 3 - MRG	25	28	17
- LRG	13	100	0
% of Total Ties	24%	45%	15%

TABLE 5

TIE DOMINATION

	Teacher-Dominated	Student-Dominated
Period 1	60%	40%
Period 2 - MRG	64%	36%
LRG	86%	14%
Period 3 - MRG	77%	23%
LRG	66%	34%
Total % of Ties	71%	29%

TABLE 6

STUDENTS' COHESION TYPES

		Dick	Harry	Tom
Period 1 -	Lexical	75%	50%	62.5%
	Ellipsis	25	16.6	12.5
	Reference	0	33.3	12.5
	Substitution	0	0	12.5
Period 2	Lexical	33.3	60	40
	Ellipsis	33.3	30	48
	Reference	0	10	12
	Substitution	33.3	0	0
Period 3	Lexical	35.5	8	31
	Ellipsis	64.5	72	55.5
	Reference	0	20	13.5
	Substitution	0	0	0

TABLE 7

PROPORTIONATE USE OF VERB-TYPES

Verb Type	Basic				Mixed Experiential				Benefactive				Total			
Collection Period 1 (No. Verbs = 71)																
	C	H	D	T	C	H	D	T	C	H	D	T	C	H	D	T
State	15	8			6	1				1			21	11		
Action	37				10				1				48		1	1
Process	8				.8								17			
Total	61	9			24				1	1			86	11	1	1
Collection Period 2 (No. Verbs = 86)																
	C	H	D	T	C	H	D	T	C	H	D	T	C	H	D	T
State	7				12				2				21			
Action	38	1		2	15			2	2	2			56	3		5
Process	7				3	3			1				12	3		
Total	52	1		2	30	3		2	5	2			89	6		5
Collection Period 3 (No. Verbs = 293)																
	C	H	D	T	C	H	D	T	C	H	D	T	C	H	D	T
State	27	1	2	1	9	1			1				37	2	2	
Action	14	2	1		9	1							25	3		
Process	11	2	2		12				1				25	2	2	
Total	52	5	4	1	31	2	1		2				86	8	5	1
All Collection Periods (No. Verbs = 450)																
	C	H	D	T	C	H	D	T	C	H	D	T	C	H	D	T
State	21	2	1	1	9	1			1				31	3	2	1
Action	22	2	1		11				1				34	2	2	1
Process	10	2	1	1	10	1			1				21	3		
	54	6	3	2	30	2			3				86	8	4	2

C = Ms. Cook (teacher); H = Harry; D = Dick; T = Tom. For definitions and discussions of Basic and Mixed Verb-types, see Mears et al., (1981); adapted from Cook, 1979). Numbers in parentheses are raw frequencies. Percentage totals across columns and rows may not be identical because of rounding off.

TABLE 8

PROPORTIONATE USE OF PHRASES OTHER THAN VERB PHRASES

Types of Phrase	Collection Period																			
	1 (N=209)					2 (N=213)					3 (N=647)					All (N=1069)				
	C	H	D	T	Total	C	H	D	T	Total	C	H	D	T	Total	C	H	D	T	Total
Noun																				
Agent	7				8	13				14	8	1			9	9				9
Object	28	3			32	23			1	24	38	3	1	1	43	33	2	1	1	37
Experiencer	7				7	6				7	6				6	6				6
Beneficiary					1	1				1	1				1	1				1
Adverb/ Preposition	27	2			29	22	2			24	23	1	1		25	23	1	1		25
Conjuction/ Subordinator	5				62			1	3	2				2	3				3	
Phrase Not in Clause	14	1		1		19	1	7		27	11	1	2	1	14	12	1	3	1	17
Total	89	8	1	2	100	86	4		3	100	88	6	5	3	100	87	6	4	2	100

C = Mrs. Cook (Teacher); H = Harry; D = Dick; T = Tom Numbers in parentheses are raw frequencies.
Percentages across rows and columns may not be identical because of rounding off.

TABLE 9

PROPORTIONATE USE OF PHRASES OTHER THAN CLAUSES (= VERB PHRASES) AS MEASURE OF STYLISTIC COMPLEXITY

	Collection Period																				
	1					2					3					4					
	C	H	D	T	Total	C	H	D	T	Total	C	H	D	T	Total	C	H	D	T	Total
1) Clauses (=Verb Phrase)	86 (61)	11 (8)	1 (1)	1 (1)	100 (71)	89 (76)	7 (6)		5 (4)	100 (86)	86 (251)	8 (22)	5 (16)	1 (4)	100 (293)	86 (388)	8 (36)	4 (17)	2 (9)	100 (450)
2) All Other Phrases	89 (186)	8 (16)	1 (2)	2 (5)	100 (209)	86 (184)	4 (9)	7 (14)	3 (6)	100 (213)	88 (506)	6	5	3	100	87	6	4	3	100
3) Phrases Not in Clauses	81 (30)	8 (3)		11 (4)	100 (37)	70 (40)	5 (3)	25 (14)		100 (57)	70 (63)	9 (8)	14 (13)	7 (6)	100 (90)	72 (133)	8 (14)	15 (27)	5 (10)	100 (184)
4) All Other Phrases In Clauses [2-3]	91 (156)	8 (13)	1 (2)	(1)	100 (172)	92 (144)	4 (6)		4 (6)	100 (156)	89 (497)	6 (33)	3 (17)	2 (10)	100 (557)	90 (797)	6 (52)	2 (19)	2 (17)	100 (885)
Ration of AOPIC/C [4]	2.56	1.63	2.	1.	2.42	1.89	1.		1.5	1.81	1.98	1.5	1.06	2.51	1.90	2.06	1.44	1.12	1.89	1.97

C=Mrs. Cook (teacher); H=Harry; D=Dick; T=Tom. For discussions of Sylistic Complexity see Hurndon et al. (1979) and Meara et al. (1981); adapted from Cook, 1979. Numbers in parentheses are raw frequencies. Percentages across rows and columns may not be identical because of rounding off.

APPENDIX A

SUMMARY OF COHESION ANALYSIS

AND DESCRIPTION OF THE CODING SCHEME
(Halliday & Hasan, 1976, pp. 333-339)

A. Type of Cohesion

REFERENCE		Coding R
1. Pronominals		1
(1) singular, masculine	*he, him, his*	11
(2) singular, feminine	*she, her, hers*	12
(3) singular, neuter	*it, its*	13
(4) plural	*they, them, their, theirs*	14
1(1–4) functioning as:		
(a) non-possessive, as Head	*he/him, she/her, it, they/them*	6
(b) possessive, as Head	*his, hers, (its), theirs*	7
(c) possessive, as Deictic	*his, her, its, their*	8
2. Demonstratives and definite article		2
(1) demonstrative, near	*this/these, here*	21
(2) demonstrative, far	*that/those, there, then*	22
(3) definite article	*the*	23
2(1–3) functioning as:		
(a) nominal, Deictic or Head	*this/these, that/those, the*	6
(b) place adverbial	*here, there*	7
(c) time adverbial	*then*	8
3. Comparatives (not complete lists)		3
(1) identity	*eg: same, identical*	31
(2) similarity	*eg: similar(ly), such*	32
(3) difference (*ie:* non-identity and dissimilarity)	*eg: different, other, else additional*	33

		Coding
(4) comparison, quantity	*eg: more, less, as many*; ordinals	34
(5) comparison, quality	*eg: as*+adjective; comparatives and superlatives	35
3(1–5) functioning as:		
(a) Deictic	(1–3)	6
(b) Numerative	(4)	7
(c) Epithet	(5)	8
(d) Adjunct or Submodifier	(1–5)	9

Note: Not all combinations of (1–5) with (a–d) are possible; the usual functions are those indicated here in the last table.

SUBSTITUTION		S
1. Nominal substitutes		1
(1) for noun Head	*one/ones*	11
(2) for nominal Complement	*the same*	12
(3) for Attribute	*so*	13
2. Verbal substitutes		2
(1) for verb	*do, be, have*	21
(2) for process	*do the same/likewise*	22
(3) for proposition	*do so, be so*	23
(4) verbal reference	*do it/that, be it/that*	24
3. Clausal substitutes		3
(1) positive	*so*	31
(2) negative	*not*	32
3(1–2) substitute clause functioning as:		
(a) reported		6
(b) conditional		7
(c) modalized		8
(d) other		9

ELLIPSIS		E
1. Nominal ellipsis		1
(1) Deictic as Head		11
i. specific Deictic		1
ii. non-specific Deictic		2
iii. Post-deictic		3
(2) Numerative as Head		12
i. ordinal		1
ii. cardinal		2
iii. indefinite		3
(3) Epithet as Head		13
i. superlative		1
ii. comparative		2
iii. others		3
2. Verbal ellipsis		2
(1) lexical ellipsis ('from right')		21
i. total (all items omitted except first operator)		1
ii. partial (lexical verb only omitted)		2
(2) operator ellipsis ('from left')		22
i. total (all items omitted except lexical verb)		1
ii. partial (first operator only omitted)		2

Note: Where the presupposed verbal group is simple there is no distinction between total and partial ellipsis; such instances are treated as 'total'. Where it is above a certain complexity there are other possibilities intermediate between the total and partial as defined here; such instances are treated as 'partial'.

3. Clausal ellipsis		3
(1) propositional ellipsis		31
i. total (all Propositional element omitted)		1
ii. partial (some Complement or Adjunct present)		2
(2) modal ellipsis		32
i. total (all Modal element omitted)		1
ii. partial (Subject present) [rare]		2

Note: Lexical ellipsis implies propositional ellipsis, and operator ellipsis implies modal ellipsis, unless all clause elements other than the Predicator (verbal group) are explicitly repudiated.

(3) general ellipsis of the clause (all elements but one omitted)		33
i. WH- (only WH- element present)		1
ii. yes/no (only item expressing polarity present)		2
iii. other (other single clause element present)		3
(4) zero (entire clause omitted)		34
3(1–4) elliptical clause functioning as:		
(a) yes/no question or answer		6

		Coding
(b) WH- question or answer		7
(c) 'reported' element		8
(d) otherwise		9

Note: Not all combinations of (1–4) with (a–d) are possible.

CONJUNCTION (items quoted are examples, not complete lists) Note: (E) = external, (I) = internal.		C
1. Additive		1
(1) simple: (E/I)		11
i. additive	*and, and also*	1
ii. negative	*nor, and . . . not*	2
iii. alternative	*or, or else*	3
(2) complex, emphatic: (I)		12
i. additive	*furthermore, add to that*	1
ii. alternative	*alternatively*	2
(3) complex, de-emphatic: (I)	*by the way, incidentally*	13
(4) apposition: (I)		14
i. expository	*that is, in other words*	1
ii. exemplificatory	*eg, thus*	2
(5) comparison: (I)		15
i. similar	*likewise, in the same way*	1
ii. dissimilar	*on the other hand, by contrast*	2
2. Adversative		2
(1) adversative 'proper': (E/I)		21
i. simple	*yet, though, only*	1
ii. +'and'	*but*	2
iii. emphatic	*however, even so, all the same*	3
(2) contrastive (avowal): (I)	*in (point of) fact, actually*	22
(3) contrastive: (E)		23
i. simple	*but, and*	1
ii. emphatic	*however, conversely, on the other hand*	2
(4) correction: (I)		24
i. of meaning	*instead, on the contrary, rather*	1
ii. of wording	*at least, I mean, or rather*	2

		Coding
(5) dismissal: (I)		25
i. closed	*in any/either case*	1
ii. open-ended	*in any case, anyhow*	2
3. Causal		3
(1) general: (E/I)		31
i. simple	*so, then, therefore*	1
ii. emphatic	*consequently*	2
(2) specific: (E/I)		32
i. reason	*on account of this*	1
ii. result	*in consequence*	2
iii. purpose	*with this in mind*	3
(3) reversed causal: (I)	*for, because*	33
(4) causal, specific: (I)		34
i. reason	*it follows*	1
ii. result	*arising out of this*	2
iii. purpose	*to this end*	3
(5) conditional: (E/I)		35
i. simple	*then*	1
ii. emphatic	*in that case, in such an event*	2
iii. generalized	*under the circumstances*	3
iv. reversed polarity	*otherwise, under other circumstances*	4
(6) respective: (I)		36
i. direct	*in this respect, here*	1
ii. reversed polarity	*otherwise, apart from this, in other respects*	2
4. Temporal		4
(1) simple: (E)		41
i. sequential	*then, next*	1
ii. simultaneous	*just then*	2
iii. preceding	*before that, hitherto*	3
(2) conclusive: (E)	*in the end*	42
(3) correlatives: (E)		43
i. sequential	*first . . . then*	1
ii. conclusive	*at first/originally/ formerly . . . finally/now*	2
(4) complex: (E)		44
i. immediate	*at once*	1
ii. interrupted	*soon*	2

		Coding
iii. repetitive	*next time*	3
iv. specific	*next day*	4
v. durative	*meanwhile*	5
vi. terminal	*until then*	6
vii. punctiliar	*at this moment*	7
(5) internal temporal: (I)		45
i. sequential	*then, next*	1
ii. conclusive	*finally, in conclusion*	2
(6) correlatives: (I)		46
i. sequential	*first . . . next*	1
ii. conclusive	*in the first place . . . to conclude with*	2
(7) here and now: (I)		47
i. past	*up to now*	1
ii. present	*at this point*	2
iii. future	*from now on*	3
(8) summary: (I)		48
i. summarizing	*to sum up*	1
ii. resumptive	*to resume*	2
5. Other ('continuative')	*now, of course, well, anyway, surely, after all*	5
6. Intonation		6
(1) tone		61
(2) tonicity		62

LEXICAL	L
1. Same item	1
2. Synonym or near synonym (incl hyponym)	2
3. Superordinate	3
4. 'General' item	4
5. Collocation	5
1–5 having reference that is:	
(a) identical	6
(b) inclusive	7
(c) exclusive	8
(d) unrelated	9

B. Direction and distance of cohesion

	Coding
IMMEDIATE	0
Not immediate:	
MEDIATED [number of intervening sentences]	M[n]
REMOTE NON-MEDIATED [number of intervening sentences]	N[n]
CATAPHORIC	K

Note: Any cohesive instance, or 'tie', may be 'immediate' (presupposing an item in a contiguous sentence) or not immediate. If not immediate, it may be 'mediated' (having one or more intervening sentences that enter into a chain of presupposition) or 'remote' (having one or more intervening sentences not involved in the presupposition), or both. Finally it may be anaphoric or cataphoric; cataphoric ties are relatively infrequent and almost always immediate. A tie is assumed to be anaphoric unless marked 'K'.

The coding scheme provides a means of representing the cohesive patterns in a text in terms of the present analysis. Each sentence is given an index number, and the total number of ties in that sentence is entered in the appropriate column. Then for EACH TIE we specify (A) the type of cohesion and (B) its distance and direction.

The coding is designed to allow for variation in the delicacy of the analysis. For example, suppose we had

What is Mary doing? – Baking a pie.

we could code the second sentence as any of the following:

Ellipsis	E
Clausal ellipsis	E 3
Clausal ellipsis: modal	E 3 2
Clausal ellipsis: modal: total	E 3 2 1

and with any of these we could specify 'functioning as answer to WH-question' simply by adding a '7': E7, E37, E327 or E3217. (There is also verbal ellipsis, type E221, but this can be predicted from the clausal ellipsis.) In the coding of all types of cohesion except conjunction, the numbers 1–5 are used for subcategorization and 6–9 for cross-categorization. In conjunction there is no cross-categorization, but there is more subcategorization, so all the numbers 1–8 are used for this purpose. The primary types of cohesion are shown by their initial letters: R (reference), S (substitution), E (ellipsis), C (conjunction), L (lexical). Letters are also used to indicate the direction and distance.

COHESION ANALYSIS -
SECOND DATA COLLECTION PERIOD,
DAY ONE, MIDDLE READING GROUP

Sentences	No. of Ties	Cohesive Item	Type	Distance	Presupposed Item
T What is the problem about going to the zoo? Tom?		They (reply)	R.I.14.6	Out of interchange N(5)	Tony, Dan & Ben
Tom They wudn't 'lowed t' go on the bus theirself.	2	They.... (S)	E.3.31.1.7	0	S'-what....
T That's right.	1	That	R.2.22.6	0	S - "They....
Why couldn't Mother go with them?	1	Them	R.I.14.6	N(7)	They--Tony, Dan & Ben
Do you remember why their mother wasn't allowed, or couldn't, wasn't able to go with them?	3	Mother Couldn't Them	L.I.6 L.I.6 R.I.14.6	0 0 N(8)	Mother Couldn't They-Tony, Dan & Ben
Harry?					
H She had too much work to do.	2	She She..(s)	R.I.12.6 E.3.31.1.7	0	Mother S - Do you ...
T That's exactly right.	1	That	R.2.22.6	0	S - She...
All right, now. Then Jill had an idea for them	2	Then	C(E).4.41.1	N(1)	?
What was Jill's smart idea? Tom?	2	Them Jill idea	R.I.14.6 L.I.6 L.I.6	N(1) 0 0	They--Tony, Dan & Ben Jill Idea
Tom To tr...follow the bus.	1	To... phrase	E.3.31.1.7	0	S-What...

Sentences	No. of Ties	Cohesive Item	Type	Distance	Presupposed Item
T What di...what did he tell them to do?	Out of interact, but pronoun ref. cohesion				
Tom Go to the bus stop.	1	Go to..	E.3.31.1.7	0	S-What di...
T	That's right.		1	That	R2.22.6
And the boys had to tell the policeman					
What about the bus stop, that wasn't gonna do them any good, Why? Harry?	2	Bus stop	L.I.6	M(1)	Bus stop
		Them	R.I.14.6	0	Boys
H Um, they wudn't 'lowed to go on the bus theirself.	2	They	R.I.14.6	0	Boys
		Bus	L.I.6	0	Bus (stop)
T That's right.	1	That	R.2.22.6	0	S-They....

APPENDIX B

DESCRIPTION OF THE COMPUTER-ASSISTED LANGUAGE ANALYSIS SYSTEM (CALAS)

The explicit paradigm for CALAS is a form of case grammar whose informational unit is the clause. By difinition, the clause contains one and only one verb phase, which, in turn, defines an essential relation (e.g., of state, action, or process) within the clause. Non essentially, adverbial or prepositional phrases may occur within clauses to define peripheral relations (e.g., of cause, manner, time, purpose); similarly, conjunctions and subordinators may occur to define relations between clauses. Use of the paradigm entials both a syntactic analysis of word strings as they occur linearly in the text, and a non-linear, semantic analysis of essential and peripheral relations within clauses and blocks of clauses (cf. Cook, 1979, adapted from Chafe, 1970; Fillmore, 1968).

To accomplish this kind of anlaysis, CALAS was constructed as an interactive system, the principle components of which are persons and a computer's "hardware" and "software." The software includes four sets of programs that operate in three stages of analysis. In stage 1, the computer reads a text in the English language and displays its word-for-word, grammatical equivalents (e.g., noun, verb, adverb). Because there remain fine, perceptual discriminations of structure-within-context to be made, beyond the foreseeable ken of computers (cf. Marr & Nishihara, 1978), CALAS prescribes for editing of the transformed text by human monitors and at each stage of analysis. Editing of the computer's relatively few "errors" revealed in the display may be accomplished directly and on-line, or off-line from a print-out of the display.

At stage 2, the edited output of stage 1 is transformed into phrases (e.g., noun phrase, verb phrase, prepositional phrase). Its edited output is then aggregated into clauses. Finally, the verb phrases are identified as case-markers (defining essential relations of state, action, process, experience, benefaction), in terms of which noun phrases are assigned case-roles (as agents, objects, experiencers, or beneficiaries of an essential action, process, or state (Pepinsky, Baker, Matelon & May, 1977; Meara et al., in press; Pepinsky, 1980; adapted from Rush et al., 1973).

Information exhibited in the edited output of stage 3 is now ready for quantification and further statistical analysis. At present these analyses have centered on two sets of phenomena, providing measures (a) of stylistic complexity (e.g., numbers of words, phrases, clauses used by any or all speakers; number of clauses per independent clause, number of phrases per clause, cf. Hurndon et al., 1979; Meara et al., 1979; adapted from Cook, 1979) and of essential relations within clauses (e.g., relative proportions of different verb-types employed by any or all speakers (cf. Bieber, Patton, & Fuhriman, 1977; Meara et al., in press; Patton, Fuhriman & Bieber, 1977). We present results of both kinds of analysis, comparing our informants in terms of their relative proportions of phrases to clauses as a measure of stylistic complexity, and of their proportionate uses of any and all types of verbs to yield measures of semantic communication. After Cook (1979) and Meara et al. (in press), the system is based on postulation of the existence of three primary or fundamental types of verbs. The adapted definitions follow:

State verbs define a particular, non-causal relation between persons or things, or state or property of such an object.

Examples--I am happy. The wood is dry.

Process verbs define a causal relation in which something is happening to a person or a thing.

Examples--I was burned. The wood dried.

Action verbs define a causal relation in which a person or thing does something (optionally, to somebody or something).

Examples--May hit John. The boy ran.

When any of the three inherent semantic features of state, process or action is present in simple form, the verb phrase is termed basic. In addition to these basic types, Cook (1979) proposed three other categories of verbs, which only exist interactively with the fundamental types, forming compounds of them. This second set, of interactive types, includes experiential and benefactive verbs. Experiential verbs define relations in which states of feeling, sensing, or knowing, are attributed, or acts of consciousness or awareness are imputed, to a person or thing. Benefactive verbs define a relation in which persons or things are identified as beneficiaries of a state, an action, or a process. The latter verbs connote ownership or possession of, or that someone or something has benefitted from, somebody or something. The adapted definitions and examples of the interactive verb-types are as follows:

State-Experiential verbs define cognitive or affective states.

Examples--I knew the answer. I wanted a drink.

State-Benefactive verbs define states of ownership.

Example--I have four daffodils.

Process-Experiential verbs define the experiencing of a sensory/ perceptual activity.

Examples--I heard a cat. I felt the pain.

Process-Benefactive verbs define an activity that is of benefit to someone or something.

Examples--I received a new job. The forest is reclaiming the land.

Action-Experiential verbs define an action that provides an experience to a person or thing.

Examples--I spoke to them. She tells me everything.

Action-Benefactive verbs define an action that benefits someone or something.

Example--I gave him some money.

Appendix C

Sample of Mehan's System

of Discourse Analysis Coding

MEHAN ANALYSIS FORMAT

Phases	Initiation (Each initiation act compels a reply once an act has begun, interaction continues until symmetry between initiation and reply acts is established	Reply	Evaluation
Opening	1. Directive	Reaction < correct / incorrect	Accepts Prompts Rejects
	2. Informative	Acknowledgement < correct / incorrect	Accepts Prompts Rejects } optional
Instruct. broken into topical sets	1. choice elicitation 2. product elicitation 3. process elicitation 4. metaprocess elicitation These can be presented as: 1. individual nominations 2. invitations to bid 3. invitations to reply	choice response - agree or disagree product response - provide factual response process response - provide opinion metaprocess response - give insight into process	Accepts Rejects Prompts
closing	1. Informative 2. Directive	Acknowledgement Reaction	optional Accepts Prompts Rejects

SAMPLE OF MEHAN ANALYSIS

INITIATION	REPLY	EVALUATION
T-There's no new words on this page. You've read all these words before. Try to sound them out. You know the sounds. Find out what Harry wants the boys to do. Show me that you are done reading. (Hand raised) Harry? [Informative, directive, individual nomination, acknoledgement]	H-I;m stuck on w-h-e-r-e. [Reaction]	T-OK [Accepts]
T-make the wh sound wh-wh [Directive]	H-Where. (H reads... Where are the tigers) [Product response]	No verbal evaluation
T-Dick? [Acknowledgement]	D-I'm stuck on h-a-v-e [Reaction]	T-Oh, that's an easy one [Prompt]
T-Come one, make the 'h' sound [Prompts]	D-H-h T-v sound no no. [Prompt] T-H-h-v-HHvv [Prompt] D-This [Product response]	T-H-h-v [Reject, prompt]
T-No, not yet. What di- What help did he tell them to do? [Product ellcitation, invitation to bid]	D-Go to the bus stop [Product response]	T-No not yet That's right [Reject]
T-That's right. And the boys had't tell the policeman what about the bus stop, that wasn't gonna do them any good? Harry, why? [Product elicitation, individual nomination]	H-Um, they weren't 'lowed to go on the bus theriselves [Product response]	T-That's right. Good job. Now [Accept]
T-You can read all the words on that sign. Who can read what that sign says? Harry? [Product elicitation, individual nomination]	H-He [Product response]	T-That's right. Good job. Now [Accept]
T-Put a 'w' sound [Product elicitation]	H-Oo, we have tigers	
T-Make the 'h' sound [Product elicitation]	H-Here [Product response]	T-Very good [Accept]
T-Who else can read the sign [Product elicitation, invitation to bid]	D-SV-We have tigers [Product response]	

Appendix D

Sample of Sinclair & Coulthard's System of Discourse Analysis Coding

Exchange Type	Opening	Act	Answering	Act	Follow-up	Act
T-Elicit	Um, do you think the boys will get to go the library soon? May, well, may... I don't know, look at that fence. There's a lot of fence to paint there. Tom?	elicitation informative nomination	[she drops this- intended elicitation but no answering.] NV - shows page.			
T-inform	We're on this page now. Do you see that?	informative check	Ooh. NV - reply turns to page			
Boundary	O.K.	frame/worker				
T-Elicit	There's a new title to this part of the story. Who can read the title to this part of the story? Tom?	starter elicit. nomination	unintelligible	reply		
Re-initiate	Make the M sound "Muh." Or.	inform.	More.	reply		
Re-initiate	Cover up the -ing. When two vowels come together, the first one gets the long sound. What's the long sound for that first vowel? Do you see the first vowel? What sound is it gonna make here?	inform. inform. elicit. clue elicit.	P.	reply	No. That's the consonant.	eval.

Exchange Type	Opening	Act	Answering	Act	Follow-up	Act
T-Elicit	Two vowels are a & i. When two vowels come together, the first one gets the long sound. What's the long sound for this vowel?	starter elicit.	A (letter name)	reply	A. Good	eval +
Re-initiate	Put a t sound. Tee.	clue	Paint	reply		
Re-initiate	-ing	clue	Painting	reply		
Re-intiate	All right, the whole title again for me please.	elicit.	No audible response.			
Re-initiate	If you covered up the -e, that little word or, is or	clue	"More Painting."	reply	very good.	eval.+
Boundary	O.K. Now	frame/marker				
T-Direct	Would you please read this page silently to yourself. Find out if the boys are gonna get to go to the library.	directive	NV-children read. Ss Subvocalize		react	
P-Elicit	Tom: Why do you take that marker on go over words?	elicit	It just marks the questions I'm supposed to ask you for this story.		reply	
T-Elicit	Almost everybody is showing me that they're done. O.K. Are the boys ready to go to the library yet?	starter elicit				
	Dean?	nomination	No.	reply	O.K.	eval.+

Exchange Type	Opening	Act	Answering	Act	Follow-up	Act
T-Elicit	Why not? Why aren't they ready to go to the library?	elicit.	Tom - Because they got some more, a lot of paint to go	reply	That's right.	eval.+
T-Elicit	How does Mike feel about painting now? Tom?	elicit nomination	Good	reply		
Re-initiate	He said how he felt about about painting. Harry?	clue nomination	Sick and tired.	reply	He didn't say tired.	eval.-
Re-initiate	Just, he's...	clue	Sick	reply	Sick of painting. O.K.	eval.+
T-Elicit	How does Ken think his Dad will feel about this red fence? James?	elicit. nomination	unintelligible	reply		
Re-initiate	Dad's gonna be?	clue	Surprised.	reply	Yes	eval.+